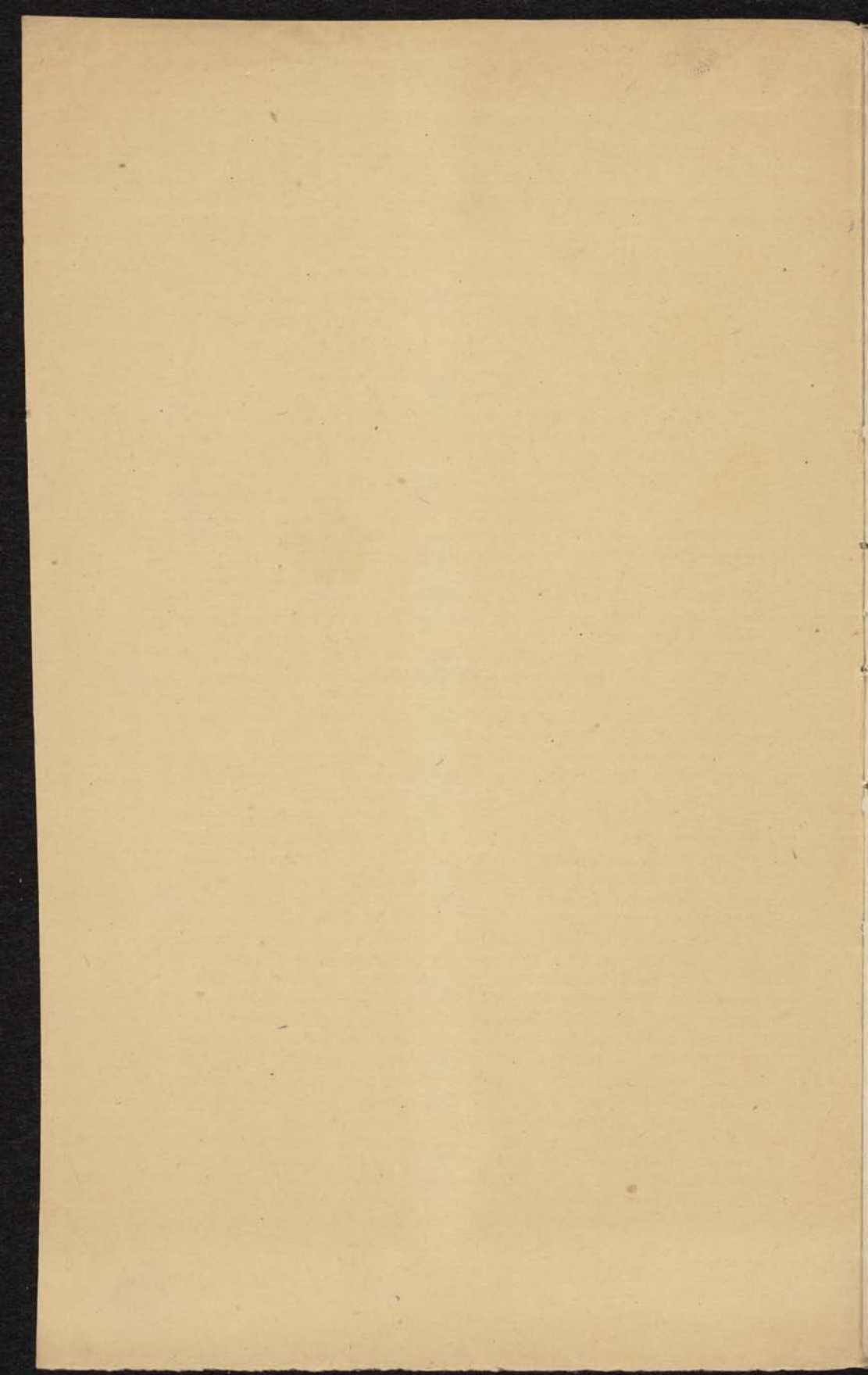


Burrough (M.)

Letter to D. Hosack. M.D.

[Cholera] Alphabet Box





Burrough D 44 Pathology

LETTER TO D. HOSACK, M. D. NEW YORK.

TO DAVID HOSACK, M. D. 61247 Philadelphia, Sept. 15th, 1831.

SIR,—I have observed under date of the 6th Sept. that the Board of Health of New York have called a special meeting of its Directors, to take into consideration the subject of Cholera, at this time raging in the north of Europe, under the apprehension that this protean scourge of the East, may perhaps eventually show itself in our country. It is with pleasure I find that a committee consisting of yourself, Drs. Stevens and M'Niven, have been appointed to institute a course of inquiries in relation to that disease, and to open an early correspondence with the medical authorities of Europe, and elsewhere, with the hope of eliciting some further information on its nature, symptoms, and best mode of treatment.

As a member of the profession, in some degree conversant with the character of the malady in question, and actuated by motives towards my fellow men, which I hope may be rightly appreciated, I take the liberty of addressing you with a few remarks on the subject, in the hope that they may not prove altogether unworthy the notice of the committee.

From my own experience in the character of Spasmodic Cholera, I am inclined to the belief, that, admitting this dreadful malady should even make its appearance in the United States, it will here, in the hands of skilful physicians, prove a more manageable disease, than appears to have been the case in some other quarters of the globe, where the sources of its origin are probably more prolific, and the climate less favourable to its extinction.

My knowledge of the character of Spasmodic Cholera, (emphatically so denominated,) is derived from intercourse with the affected, during the prevalence of the disease at Madras, on the coast of Coromandel, and at Calcutta at the close of the years 1820 and 1822. More recently, I have had ample opportunity of observing the epidemic in various parts of Bengal, and on the banks of the Burrampooter river in Assam, during the years 1829 and '30. Judging from these sources of information, I cannot for a moment admit that the disease, under ordinary circumstances of invasion, is contagious. All the facts which have come under my notice, induce me to consider it a purely epidemic disease: and I concur with Johnson, Searle, and other intelligent authors, who have written on the subject, in the opinion, "that it is induced from *malaria*, or *miasmatic exhalation*, in some form or other; and, like other epidemic diseases, it is found usually to follow in its course the current of the prevailing winds." My friend, Dr. Nicholson, Surgeon-general of the Bengal army, stationed at Fort William, Calcutta, is also of this opinion.

I hope I may not be thought too sanguine in the powers of the healing art, when I assert, that I consider Spasmodic Cholera, when judiciously encountered at the onset of an attack, as manageable a disease as the more ordinary bilious fevers of our country. At all events, my experience confirms me most fully in this conclusion.

It may not be amiss, perhaps, here to remark, that during a residence of about four months at Calcutta, in the year 1822, being at that time surgeon of a ship from this port, upwards of sixty well marked cases of Spasmodic Cholera, (principally American seamen) came under my notice, of which number but three cases terminated fatally. Among these

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was Captain H. of the ship *Adonis*, belonging to New York. This gentleman had been complaining slightly for a day or two previously to the accession of the disease, but he was not so much indisposed as to lay by or to think it necessary to take medicine. He was attacked with Cholera at 11, A. M. sent for me at 2, P. M. and died at 5—surviving the attack but about six hours.

In concluding these few observations on Spasmodic Cholera, I beg leave to state, that a more intimate acquaintance with the subject since I was first induced to test the efficacy of blood-letting in the treatment of the disease, confirms me in the conviction, that where this remedy is promptly and judiciously resorted to in the incipient stage of the attack, the most aggravated cases will be found to yield to its influence; and by its prompt application, I am disposed to think that the lives of at least ninety patients out of a hundred may be preserved.

The treatment of Spasmodic Cholera, in conformity with my views of the disease, may be summed up in a few words, viz.—early and copious blood-letting, the free exhibition of calomel, followed by the liberal use of cordials and other stimulants, (laudanum, brandy, essence of peppermint, and spirit of ammonia, alone, or in combination) terebenthinate enemata, together with all those means best calculated to restore an equilibrium of circulation, by determining to the surface. Thus, frictions with flannel, sinapisms to the extremities, and the use of the nitro-muriatic acid bath, applied by means of a sponge to the body, constitute the principal external agents of cure. My experience, however, will not warrant me in recommending venesection, with the same confidence, in the more advanced stages of the disease. It may almost always be resorted to with benefit within the first half hour or hour after the attack, but if the spasms have reached the trunk of the body, collapse taken place, and the surface assumed that shrivelled appearance which is so prominent a feature in the diagnosis of Spasmodic Cholera, the lancet cannot be relied on.

In strong and robust constitutions, venesection in the early stage of Cholera, may be carried fearlessly to the extent of thirty, forty, and even sixty ounces. At the commencement of attack, the pulse is sometimes scarcely perceptible at the wrist, beating 120,—*small, wiry*, and apparently easily compressed, but on opening a vein in the arm, it often becomes strong and voluminous.

Blood-letting then in Spasmodic Cholera, under the circumstances just detailed, will be found to cut short the disease, and open the way for the auxiliary treatment already intimated, which last, however, will be found of little avail unless preceded by the former. Phlebotomy operates by relieving cerebral congestion, allays the irritability of the stomach, overcomes muscular excitability, and spasm of the extremities, and in a majority of cases, lays the foundation for a speedy convalescence.

In the course of my experience with Cholera, I am not aware of ever having lost a patient, when called sufficiently early to justify me in the use of the lancet. In the three cases referred to, which terminated fatally, I had not the opportunity of seeing the patients until too great a degree of prostration had supervened, to hold forth the least prospect of success from opening a vein, (from two or three hours having already elapsed.)

Very respectfully, your obedient servant,

M. BURROUGH, M. D.

INDIAN CHOLERA.

The following paper addressed to the Board of Health of Philadelphia, by M. Burrough, M. D. on the subject of Spasmodic Cholera, they consider interesting, as coming from a gentleman who has had the opportunity of witnessing the disease in India, in its different stages. The Board, therefore, recommend it as a document meriting the attention of the community, and with that object in view, have caused its publication. The Board at the same time have pleasure in tendering to the author their acknowledgements for the opportunity afforded them of giving publicity to his valuable communication.

Gentlemen—The public mind appears to have been recently much excited with respect to Cholera. The European papers are teeming with the horrors of this dreadful malady, as manifested in the armies of Russia and Poland; and we have reason to believe that it has at length shown itself on the western coasts of Europe. If this be the case, it is time indeed for us to look to the protection of the cities on our seaboard, and to adopt the most efficient measures to prevent, if possible, its introduction into this country. I do not wish by any thing that I may say on this subject, to increase public alarm, or to excite greater apprehension than already exists in the minds of my countrymen; although there may be some grounds to fear that the malady may show itself among us, yet I think there are many chances against such a conclusion.

The disease, in travelling from Europe to this country, has a wide expanse of water to pass over. It has also, at this season of the year, the prevalence of westerly winds to oppose its advancement as an epidemic. The approaching cold weather may have its influence in deadening the malignancy of its virus, if not entirely subduing the disease.—Many circumstances may be enumerated, all of which operate against the probability of its reaching the United States at this time; and for the present, we will leave it where we find it, and proceed to the suggestion of measures of relief, in the event of its arrival.

The Spasmodic Cholera of India, by some has been thought *contagious*, but by others, perhaps better prepared to decide the question, this character has been denied it. I am inclined to the more favourable opinion of the malady, and disposed to consider it in its original form, *simply an aggravated epidemic*, assuming, under peculiar circumstances, a peculiar character.

But, whether Spasmodic Cholera be *contagious* or *non-contagious*, I shall not at present attempt to ascertain. The devastating influence of the malady, as evinced in every part of the world where it has appeared, and particularly of late in the northern part of Europe, is sufficient to induce us to have recourse to every possible means of preventing the introduction of the disease into our country, and if we err in opinion regarding its origin and character, let us act on the safe side. Diseases assume different characters, under circumstances of a varied nature, and it has been said that an epidemic disease, favored by local causes, sometimes becomes contagious, and vice versa, a contagious disease may be rendered epidemic, (as verified in the prevalence of small pox.) Under these circumstances, let us be on the alert for the enemy. Let the sentry not be dozing on his post, and in confirmation of those judicious measures already adopted by the intelligent Board of Health in regard

to the disease, I would recommend their strict observance, as affording perhaps the best means of protection to the city.

Happily for our country Spasmodic Cholera has never been known in the United States, and perhaps the character, symptoms, and treatment of the disease, are little understood by the majority of our physicians, few of whom have had an opportunity of seeing it. Thinking, therefore, that it might be interesting to you to learn something of the disease in question, I propose offering a few remarks on its nature and treatment, as ascertained by medical men in British India, and confirmed by my own experience.

The Indian or Spasmodic Cholera is recognized in the Bengalese language under the name of '*Hoolah Hootah*.' It seems to have been long known to the natives of the East, as occasionally occurring in various parts of Bengal, during the summer and autumnal months, but it first assumed an epidemic character in the year 1817.

In the month of August of that year, the disease appeared in the district of Jessore, which is a flat marshy section of country, (cultivated principally for indigo,) and lying between the river Hoogley, and the main branch of the Ganges, about 100 miles north-east of Calcutta.

After ravaging the district of Jessore, visiting most of the native villages, in the course of one month it found its way to Calcutta. Here its presence was attended with more appalling consequences. This city contains upwards of six hundred thousand inhabitants, made up of all classes, and of almost every nation, often huddled together in low, ill-ventilated hovels, with the damp ground for their bed, and perhaps nothing but a straw mat, or thin muslin *copparah*, or *cloth*, to protect them from the humidity of the earth. The streets are narrow, and on either side, and immediately next the dwellings, pass ditches or drains of two feet in depth, and one or more in width, which are usually a deposit for every description of filth, and emit at all times the most unpleasant exhalation that can possibly result from vegetable and animal decomposition. It is not, therefore, to be wondered, that Cholera, in the native part of the town of Calcutta, should have assumed a most aggravated form, and swept off its thousands.

From Calcutta the disease made its way to almost every part of Asia. It soon overran British India, and like an invading foe, carried horror and destruction wherever it marched. It found its way to *Madras*, the Island of *Ceylon*, the *Mauritius*, and *Bourbon*, spreading in an easterly direction to *Malacca*, *Singapore*, *Assam*, *China*, and *Batavia*. Travelling in a north westerly direction from Calcutta, pursuing the course of the Ganges, Jumna, and other large rivers towards the coast, it reached *Bombay* in about one year from the time it first broke out in Bengal. From *Bombay* the disease extended into *Arabia*, *Persia*, *Syria*, and in the year 1823, had reached the Russian city of *Astracan*, situated at the mouth of the Volga. Subsequently showing itself in Moscow and Petersburg, it spread its devastating influence over Russia and Poland, and has finally reached the cities of western Europe.

It is supposed that in the course of ten years upwards of four millions of the population of India have fallen victims to the ravages of Spasmodic Cholera. In the Island of Java, one hundred thousand persons are said to have perished. The number that fell a sacrifice to the dreadful malady at Calcutta and China, has never been satisfactorily ascertained.

Certain causes operating on the system, have been thought to predispose to disease, or to render persons more susceptible to its accession.

Among these, as applicable to Cholera, may be enumerated *exposure to the sun, or night air, wet feet, fatigue, mental anxiety, fear, loss of sleep, irregularity in eating*, and particularly the immoderate use of *spirituous potations*. It has been remarked by the Physicians of the East, and I think justly, that the *debauchee*, from his habits of life, is particularly predisposed to irremediable Cholera. With respect to the pathology of Spasmodic Cholera, I regret to say that the subject is yet involved in much obscurity—a wide field is, therefore, open for medical inquiry.

Without adverting to the adverse theories, already advanced by many intelligent authors, in reference to Cholera, my experience induces me to view it as a malady originally dependant on a morbid condition of the atmosphere, arising perhaps from the decomposition of vegetable or animal matter, or from *both*, promoted by moisture, and a certain elevation of temperature.

Perhaps the atmosphere is rendered deleterious, by a diminution of its quantum of oxygen, or possibly from an excess of carbonic acid gas, or of nitrogen. This morbid atmosphere being inhaled, and coming into contact with the delicate tissue of the pulmonary organs, I am inclined to believe may induce, through the medium of the sanguineous or nervous system, all the mischievous and fatal consequences of Epidemic Cholera.

Whether the view I have taken of the disease be correct, I leave to be decided by further observation. The hint is one of mere speculation with me. The physician is bound more immediately to direct his attention to the symptoms, in every form of the disease, whether it be called by the name of *Cholera Morbus*, *Mort de Chien*, *Plague*, or *Gastritis*. And the earlier symptoms all tend to the conclusion, that the mischief is communicated through the channel I have named. Patients sometimes suffer all that oppression at the chest, and difficulty of breathing, which are experienced from inhaling the fumes of charcoal, or from exposure to *wells, caverns*, or other places, long closed against a free ventilation.

Symptoms—Spasmodic Cholera is sometimes preceded by a sense of languor, slight headach, dizziness, derangement of the bowels, nausea, &c. But more generally the disease attacks suddenly, and without any premonitory indication. An individual may be pursuing his usual avocation, in the full enjoyment of health, is at once attacked, and dies! The soldier may be marching to the field of battle buoyed up with the highest spirit of conquest, is suddenly stricken down with all the horrible symptoms of the disease, and closes his eyes in death, in the short space of half an hour.

Among the first symptoms, however, presented to the physician, is a purging and vomiting, attended with cold, clammy sweat, spasms of the extremities, and difficult respiration. The pulse is commonly accelerated, small and hard, and often becomes almost imperceptible by the slightest pressure. These then are the symptoms that usually present themselves at the time the physician is called to the aid of the patient. But on inquiry, it will be found that he has suffered perhaps some dizziness, nausea, with some heat and a sense of weight at the epigastrium.

The discharge from the stomach and bowels, may, at first, be mixed with their contents, but is soon followed by a muddy, watery fluid, which once seen, can never be mistaken by the physician. It is *inodorous, straw coloured*, and may be compared in general appearance to the common spruce beer of our country, entirely *destitute of bile*, and in this respect differs essentially from the dejections that take place in ordinary Cholera Morbus.

The inspirations are usually long and full, and the expirations rapid, and, as the disease advances, the breathing becomes more difficult and laborious. There is an unnatural heaving of the shoulders, and dilatation of the alæ of the nose, and the muscles of the abdomen, as well as the diaphragm itself, seem to be called upon to perform an undue share in the functions of respiration. The eye has a wandering, heavy, and restless movement, and is not unfrequently suffused. Tears involuntarily find their way down the cheek; and the countenance is haggard and dejected. The pulse is sometimes remittent for a beat or two, continuing to become less distinct. Spasms, or cramps, now for the first time are complained of. They attack the great toe, soon go off, in a few seconds return, and are felt in the ball or hollow of the foot, causing the patient to extend the foot for relief. Spasm of short duration, recurs with more violence, and fixes itself on the calf of the leg—the patient cries out with agony. His spirits are much depressed. He sighs, and throws himself from side to side, on the bed, unwilling to be covered,—rolls his head on his pillow—and when asked how he feels? he answers, Cannot tell how! He feels no pain, except when the spasms take place; manifests at the same time the greatest possible distress; but is unable to refer it to any particular part. The voice is hollow and unnatural.—He asks for water, but this affords him no relief,—it is no sooner swallowed than ejected. Patients sometimes complain of heat at the pit of the stomach, but this is not universally the case. The eyes are inclined upwards. The secretion of the kidneys and salivary glands is often suspended. Cold drops of sweat roll from every part of the body—the skin is livid and corrugated, a peculiar feature in the diagnosis of Spasmodic Cholera. The spasms now perhaps are felt in the fingers; the thumb is forcibly drawn into the palm of the hand; the muscles of the forearm are next affected, and at the same time, the spasms perhaps return to the leg. Finally the larger muscles of the thigh and those of the abdomen, become affected, the latter being collapsed towards the spine. Each successive spasm becoming more violent and recurring at shorter intervals till the powers of life are exhausted, though the patient is usually conscious to the last. As the disease advances, the symptoms are mitigated; the spasms recur at longer intervals, or may cease altogether. The lips become livid, and the eye, surrounded with a dark areola, sinks into its socket. The cheeks collapse as though the patient were dying of a pulmonary disease, that had been preying upon his vitals for months. In short, the *facies Hypocritica*, at the close of this disease, is exemplified to a remarkable degree. The pulse is now no longer to be felt at the wrist—the heart ceases to perform its functions. The skin is shrivelled, the eye becomes fixed, the chin falls, and the patient calmly sinks into the arms of death, in a period usually from three to six hours from the accession of the attack, though sometimes the vital powers are sustained for twelve or eighteen hours. I have observed in the course of my experience in this disease, that where the patient survived the fifth or sixth hour, there was every reason to hope for recovery.

Treatment—From what I have now said in relation to the nature and symptoms of Spasmodic Cholera, it would appear to be a disease depending more immediately on congestion of the sanguineous system, affecting particularly, the brain, stomach and liver. Hence the lancet is called into requisition, as the sheet anchor of our hope, and principal reliance in subduing the more violent symptoms at the onset of the attack. But *venesection*, I am sorry to say, cannot be relied on in the

more advanced stage of the disease. Called in at the early stage of Spasmodic Cholera, I would at once bleed, and bleed freely. If the patient be of a plethoric habit, of a strong and robust constitution, from thirty to forty ounces may be abstracted, and if the symptoms seems to call for it, after the lapse of half an hour, from fifteen to twenty ounces more may be drawn. Under these circumstances, I would draw blood until re-action takes place, and the pulse becomes more full and soft. At the same time the patient must be put to bed, placed between cotton sheets, or blankets, and kept warm. While this is going on, prepare and administer the following powder:

R Calomel, 1 scruple,
Powdered Camphor, 5 grains,
Powdered Opium, 2 grains.

Let this powder be mixed in a tea-spoonful of syrup, and washed down with a table spoonful of the following preparation:

R Laudanum, 1 ounce,
Ess. Peppermint, $\frac{1}{2}$ ounce,
Spirits Ammonia, $\frac{1}{2}$ ounce,
Brandy, 4 ounces,
Water, 4 ounces.

The whole to be mixed together.

The patient should be protected against a current of air, and if he suffers much pain and uneasiness at the epigastrium, bathe the part with spirits of turpentine, or the tincture of cantharides, and have a sinapasm applied. Patients do not often suffer much tenesmus, but where the watery dejections have continued for some time, and the prostration great, I have had recourse to an enema, composed of half a pint of rice or starch water, and one ounce of spirits of turpentine. And in my opinion, this preparation has sometimes been resorted to with very good effect. In order to equalize excitement, and determine to the surface, frictions with flannel should not be neglected. The nitro-muriatic acid mixture, applied by means of a sponge to the body and extremities, always has a salutary effect, in exciting the skin, and overcoming spasm in Cholera, and is a favourite remedy with me in the management of the disease.—It is prepared by adding one ounce of nitric, to two of muriatic acid, to which are put three ounces of water, or a like proportion to any given quantity of the acids. I have also used the sulphuric acid in this way, diluting with twice or thrice its weight of water.

Sinapisms to the feet are not to be overlooked, as an auxiliary remedy. Blisters have not been much resorted to in Cholera, as the disease usually presented, is so rapid in its progress and termination, as to leave no time for any benefit to result from their operation. A blister of cantharides, however, may be applied with some advantage to the epigastrium, after removal of the sinapasm, where there is much uneasiness felt in that part; and particularly if accompanied with vomiting.

The powder heretofore recommended, is to be repeated, if the first be rejected. It seldom happens that the second, or at most, the third dose is thrown off. The Cholera mixture may be given in doses of a table spoonful every ten, fifteen, or twenty minutes, according to the urgency of the symptoms—not omitting, at the same time, the use of the acid bath.—After the lapse of an hour, symptoms continuing violent, a second dose of calomel, opium, and camphor, is to be exhibited, followed by an ounce of castor oil.

Blood-letting, and the exhibition of *calomel* in large doses, are found to exert a powerful influence in allaying the irritability of the stomach, and spasms attendant on Cholera, and cannot be dispensed with in the treatment. The pulse will generally be found to rise under the judicious use of the lancet; but if the physician is not called upon early in the disease, the spasms having already ascended to the muscles of the abdomen, and collapse taken place, blood-letting becomes a hazardous and doubtful dependence; yet, even here, the abstraction of a few ounces of blood from the arm, or temporal artery, seems sometimes to afford great relief, but under these circumstances there is a nicety of judgment and discrimination required in the use of the lancet, only to be acquired at the bed-side of the sufferer. The patient should be kept at all times perfectly quiet, and as much as possible in a recumbent posture.

It seldom happens that the individual has more than three or four watery dejections. He may vomit, perhaps, once or twice. At other times the spasms or cramps take place, accompanied with oppression at the chest, cold clammy sweat, and sinking of the pulse, together with other fatal symptoms of the disease, without any purging or vomiting having occurred, or if any, to a very limited extent. The last named cases are generally the most unmanageable.

On some occasions, I have had recourse to the tourniquet to arrest vomiting, and to overcome spasm in Cholera. When the tourniquet has not been at hand, I have used a common neck handkerchief. This is to be applied round the muscles of the thigh, or arm, or round both at the same time, and pressure made on the blood-vessels just at the accession of the spasm; loosening it again after the lapse of a few seconds. By this simple expedient, the spasm may often be warded off, or if not entirely prevented, its violence is greatly mitigated, much to the relief of the patient. The operation of the tourniquet, or ligature, after the manner I have detailed, is rendered intelligible to every surgeon, and not only useful in counteracting spasms in Cholera, but I have also found it efficacious in subduing, in many instances, ordinary bilious vomiting.

The tongue, in Spasmodic Cholera, does not usually manifest much evidence of disease. It is sometimes found a little coated, and cold, and may be deficient in moisture, but in other respects, natural.

The blood drawn, is commonly dark and grumous, showing some defect in the oxygenization of the fluid in its course through the lungs.—The serum never separates from the crassamentum, as in healthy blood drawn from a vein. There is, apparently, a superabundance of the red globules, coagulation always very imperfect.

The symptoms of Spasmodic Cholera may be considered favourable when the pulse rises, and becomes more full and soft, the skin warm, and respiration natural; when a discharge takes place from the bowels, mixed with bile, assuming a dark brown, or black colour, spasms less violent, and the patient is disposed to sleep.

These, then, are considered among the most favourable symptoms in the termination of an attack of Spasmodic Cholera. But when the pulse becomes less distinct, attended with symptoms of general prostration, respiration laborious, the patient covered with clammy sweat, skin shrivelled, and of a livid aspect, extremities cold, no evacuation from the bowels, indicative of a biliary secretion, death, under this awful and hopeless state of things, must soon, very soon, close the scene.

M. BURROUGH, M. D.

Philadelphia, Sept. 27, 1831.

